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MIL-STD-2045-17504
29 July 1994

MILITARY STANDARD

Information Technology DOD Standardized Profile

Internet File Transfer Profile for DOD Communications



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Foreword

This military standard is approved for use by all Departments and Agencies of the Department Of Defense (DOD).

Beneficial comments (recommendations, additions, deletions) and any pertinent data that may be of use in improving this MIL-STD should be addressed to the:

Joint Interoperability and Engineering Organization (JIEO)
ATTN: TBBF
Fort Monmouth, New Jersey 07703-5613

by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this MIL-STD or by memorandum.

This MIL-STD 2045-17504 DOD Standardized Profile (DSP) is a functional standard produced by the Data Communications Protocol Standards (DCPS) Technical management Panel (DTMP). DTMP functional standards are functional groupings of base standards. Referenced Base Standards may be commercial, DOD, or de facto standards, although International Standards (IS) (produced by ISO, CCITT (now ITU-T), and other standards bodies) are preferred when possible.

This Defense Standardized Profile (DSP) is a functional DOD Data Communications Protocol Standard (DCPS) produced by the DCPS Technical Management Panel (DTMP). The MIL-STD-2045 document series was established within the DCPS Standardization Area to allow for the enhancement of commercial standards or the development of standards that are unique to DOD.

The MIL-STD-2045-10000 series, MIL-STD-2045-10000 to MIL-STD-2045-19999 inclusive, will be used to describe how DOD will implement commercial, international, national, federal, or military standards within the functional profile concept to provide required network services. The Government Open Systems Interconnection Profile (GOSIP) will serve as the base for developing the 10000 series with DOD enhancements, unique military standards, and interim standards being used only when necessary.

The MIL-STD-2045-20000 series, MIL-STD-2045-20000 to MIL-STD-2045-29999 inclusive, will be used to describe DOD enhancements and extensions to existing commercial, international, national, or federal standards.

The MIL-STD-2045-30000 series, MIL-STD-2045-30000 to MIL-STD-2045-39999 inclusive, will be used to describe protocols and services unique to DOD that will not be supported by commercial, international, national, or federal standards.

The MIL-STD-2045-40000 series, MIL-STD-2045-40000 to MIL-STD-2045-49999 inclusive, will be used to document interim standards. Interim standards document protocols and services needed by DOD until these protocols and services are described in either a GOSIP or in a MIL-STD-2045-20000 or -30000 series standard.

The MIL-STD-2045-50000 series, MIL-STD-2045-50000 to MIL-STD-2045-59999 inclusive, will be used to describe how DOD will implement commercial, international, national, federal, or military standards within the functional profile concept to provide required network services. The Government Open Systems Interconnection Profiles (GOSIP) will serve as the base for developing the 50000 series with DOD enhancements, unique military standards, and interim standards being used only when necessary. The difference between MIL-STD-2045-10000 series and the MIL-STD-2045-50000 series is that the 50000 series are interim profiles

Specific details and instructions for establishing a MIL-STD-2045 document, as well as profile development guidelines, are documented in MIL-HDBK-829. DTMP Working Groups shall be responsible for DSP development and informal Service or Agency coordination; the DTMP Plenary shall be responsible for final review and approval.

This document is part of a set of interim DOD data communications protocol profiles based on the Internet protocol suite and is intended to support the interoperability of DOD communication networks, including connectivity with the Defense

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Data Network (DDN).

This MIL-STD-2045-17504 contains one normative annex and one informative annex:

Annex A (normative)	DSPICS REQUIREMENTS LIST (DPRL).
Annex B (informative)	CONCLUDING MATERIAL

For DOD acquisition purposes, where such differences exist, this DSP shall be the controlling document.

The Preparing Activity for this standard is the Data Communication Protocol Standards Technical Management Panel (DTMP). The custodians for the document are identified in the Defense Standardization Program, "Standardization Directory (SD-1)" and are classified in the Federal Supply Classification (FSC) system under Data Communication Protocol standards (DCPS). Additional information can be obtained from:

Joint Interoperability and Engineering Organization (JIEO)
ATTN: DTMP Chairman
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Introduction

This DOD Standardized Profile (DIP) is defined within the context of functional standardization, in accordance with the principles specified by MIL-HDBK-829. The context of functional standardization is one part of the overall field of Information Technology (IT) standardization activities - covering base standards, profiles, and registration mechanisms. A profile defines a combination of base standards that collectively perform a specific well-defined IT function. Profiles standardize the selection of options and other variations in the base standards to promote system interoperability and to provide a basis for the development of uniform, internationally recognized system tests.

One of the most important roles for a DSP is to serve as the basis for the development of recognized tests. DSPs also guide implementors in developing systems that fit the needs of the US Department Of Defense (DOD). DSPs are produced not simply to 'legitimize' a particular choice of base standards and options, but to promote real system interoperability. The development and widespread acceptance of tests based on this and other DSPs is crucial to the successful realization of this goal.

This MIL-STD is part of a set of interim Command and Control (C²) common data communication profiles. It will cease to exist upon the transition of the various military service and agency (S/A) networks to GOSIP. The purpose is to record what presently exists in, and what is needed, to achieve the interoperability of the various S/A data communication networks deployed to support a Joint Task Force (JTF).

The base standards of this DSP include Request For Comments (RFCs) designated as official by the Internet Architecture Board (IAB) standards and other RFCs.

This MIL-STD-2045-17504, DOD Standardized Profiles - Internet File Transfer Profile for DOD Communications is an Application profile for the File Transfer Protocol (FTP). This document covers the provisions and use of the features and services which are specific to the File Transfer Protocol as defined in IAB STD 9 (RFC 959 : October 1985. File Transfer Protocol) and IAB STD 3 (RFC 1123 : October 1989, Requirements For Internet Hosts -- Application and Support).

Information Technology - DOD Standardized Profile (DSP) - Internet File Transfer Profile for DOD Communications - File Transfer Protocol

1 Scope

1.1 General

This DOD Standardized Profile (DSP) 2045-17504 applies to the File Transfer Protocol (FTP) RFC Internet standards.

1.2 Position within the taxonomy

This profile is classified as MIL-STD 2045-17504 in accordance with MIL-HDBK 829.

1.3 Scenario

This DSP specifies the provisions of the File Transfer Protocol (FTP).

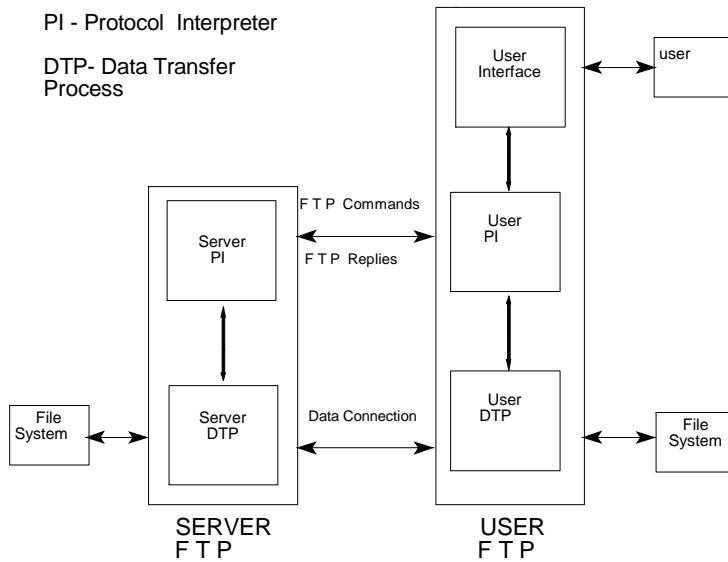


Figure 1. FTP Scenario For User to Server Interaction

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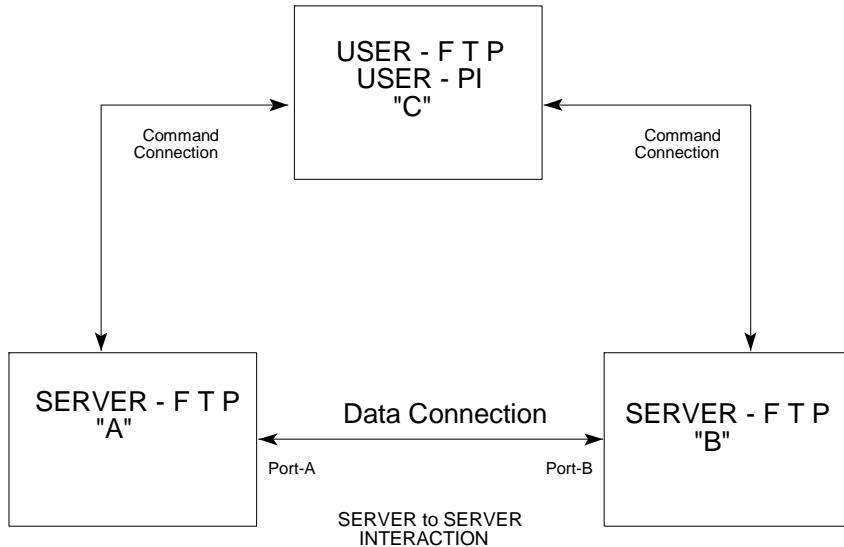


Figure 2. FTP Scenario for Server to Server Interaction

2 References

The following documents contain provisions which, through reference in this text, constitute provision of this DSP 2045-17504. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this DSP 2045-17504 are warned against automatically applying any more recent editions of the documents listed below, since the nature of references made by DSPs to such documents is that they may be specific to a particular edition.

2.1 Government Documents

2.1.1 Specifications, Standards, and Handbooks

The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

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Guidelines for Developing Data Communications Profiles.

DOD activities may obtain copies of DOD directives through their own publication channels or from the DOD Single Stock Point, Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Other federal agencies and the public may purchase copies from the U.S. Department of Commerce, National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

Copies of Federal Information Processing Standards (FIPS) are available to Department of Defense activities from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099. Others

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must request copies of FIPS from the National Technical Information Services, 5285 Port Royal, Springfield, VA 22161-2171.

2.1.2 Other Government Documents, Drawings, and Publications

The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

None.

2.2 Non-Government Publications

The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation.

2.2.1 Profiles

None.

Application for copies of these documents should be addressed to the American National Standards Institute, 11 West 42nd Street, NY, NY 10036 or to ISO, Van Demanstrate 94, 1013 CN Amsterdam, Netherlands.)

2.2.2 Base Standards

IAB STD 9 (*RFC 959 : October 1985, File Transfer Protocol (FTP)*).

IAB STD 3 (*RFC 1123 : October 1989, Requirements for Internet Hosts -- Application and Support*).

RFC documents are in the public domain, and are available on the Internet.

2.2.3 Other Non-Government documents, drawings, and publications

The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation.

The following RFCs are referenced by the Base Standard RFCs.

IAB STD 8 (*RFC 854 : May 1983, Telnet Protocol Specification*).

IAB STD 7 (*RFC 793 : September 1981, Transmission Control Protocol - DARPA Internet Program Protocol Specification*).

RFC documents are in the public domain, and are freely available on the Internet.

2.3 Order of precedence

In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3 Definitions

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Internet Architecture Board (IAB) Standards (STD): The IAB has established this as an official standard protocol for the Internet. These protocols are assigned STD numbers.

Request For Comments (RFCs): RFC are the working notes of the "Network Working Group", that is the Internet research and development community.

Note: All standards are published as RFCs, but not all RFCs specify standards.

4 Abbreviations and Acronyms

ABOR	Abort
ACCT	Account
ALLO	Allocate
APPE	Append
ASCII	American National Standard Code for Information Interchange
ATCCIS	Army Tactical Command and Control Information System
CDUP	Change to Parent Directory
CWD	Change Working Directory
DCPS	Data Communications Protocol Standards
DELE	Delete
DTMP	DCPS Technical Management Panel
EBCDIC	Extended Binary Coded Decimal Interchange Code
FTP	File Transfer Protocol
IAB	Internet Architecture Board
MCEB	Military Communications-Electronics Board
MKD	Make Directory
NLST	Name List
PASS	Password
PASV	Passive
PWD	Print Working Directory
REIN	Reinitialize
REST	Restart
RETR	Retrieve
RFC	Request For Comments
RMD	Remove Directory
RNFR	Rename From
RNTO	Rename To
SMNT	Structure Mount
STAT	Status
STD	Standard
STOR	Store
STOU	Store Unique
STRU	Structure
SYST	System
TCP	Transmission Control Protocol

5 Requirements

5.1 General Requirements

A conforming implementation of this profile shall be unconditionally compliant and therefore, shall satisfy all the "**MUST**" and all the "**SHOULD**" requirements of the reference base standards and shall not implement any capability that has

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been identified by the base standards as "**SHOULD NOT**".

5.1.1 Data Transfer Functions

There are no additional requirements to the data transfer functions as specified in RFC 959, section 3.

5.1.2 File Transfer Functions

There are no additional requirements to the file transfer functions as specified in RFC 959, section 4.

5.1.3 Declarative Specifications

There are no additional requirements to the declarative specifications as specified in RFC 959, section 5.

5.2 Conformance Requirements

Implementations claiming conformance to this DSP 2045-17504 shall support the following as stated.

5.2.1 Data Types

There are no additional requirements as specified in RFC 959, section 3.1.1 and RFC 1123, section 4.1.2.1 and section 4.1.2.2.

5.2.2 Data Structures

There are no additional requirements as specified in RFC 959, section 3.1.2 and RFC 1123, section 4.1.2.3 and 4.1.2.4.

5.2.3 Transmission Modes

There are no additional requirements as specified in RFC 959, section 3.4.

5.2.4 Commands

5.2.4.1 Access Control Commands

5.2.4.1.1 USER Command

There are no additional requirements to the USER command as specified in RFC 959, section 4.1.1.

5.2.4.1.2 PASS Command

There are no additional requirements to the PASS command as specified in RFC 959, section 4.1.1.

5.2.4.1.3 ACCT Command

There are no additional requirements to the ACCT command as specified in RFC 959, section 4.1.1.

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5.2.4.1.4 CWD Command

There are no additional requirements to the CWD command as specified in RFC 959, section 4.1.1.

5.2.4.1.5 CDUP Command

There are no additional requirements to the CDUP command as specified in RFC 959, section 4.1.1.

5.2.4.1.6 SMNT Command

There are no additional requirements to the SMNT command as specified in RFC 959, section 4.1.1.

5.2.4.1.7 REIN Command

There are no additional requirements to the REIN command as specified in RFC 959, section 4.1.1.

5.2.4.1.8 QUIT Command

There are no additional requirements to the QUIT command as specified in RFC 959, section 4.1.1.

5.2.4.2 Transfer Parameter Commands

5.2.4.2.1 PORT Command

There are no additional requirements to the PORT command as specified in RFC 959, section 4.1.2.

5.2.4.2.2 PASV Command

There are no additional requirements to the PASV command as specified in RFC 959, section 4.1.2 and RFC 1123, section 4.1.2.6.

5.2.4.2.3 TYPE Command

There are no additional requirements to the TYPE command as specified in RFC 959, section 4.1.2.

5.2.4.2.4 STRU Command

There are no additional requirements to the STRU command as specified in RFC 959, section 4.1.2.

5.2.4.2.5 MODE Command

There are no additional requirements to the MODE command as specified in RFC 959, section 4.1.2.

5.2.4.3 Service Commands

5.2.4.3.1 RETR Command

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There are no additional requirements to the RETR command as specified in RFC 959, section 4.1.3.

5.2.4.3.2 STOR Command

There are no additional requirements to the STOR command as specified in RFC 959, section 4.1.3.

5.2.4.3.3 STOU Command

There are no additional requirements to the STOU command as specified in RFC 959, section 4.1.3 and RFC 1123, section 4.1.2.9.

5.2.4.3.4 APPE Command

There are no additional requirements to the APPE command as specified in RFC 959, section 4.1.3.

5.2.4.3.5 ALLO Command

There are no additional requirements to the ALLO command as specified in RFC 959, section 4.1.3.

5.2.4.3.6 REST Command

There are no additional requirements to the REST command as specified in RFC 959, section 4.1.3.

5.2.4.3.7 RNFR Command

There are no additional requirements to the RNFR command as specified in RFC 959, section 4.1.3.

5.2.4.3.8 RNTO Command

There are no additional requirements to the RNTO command as specified in RFC 959, section 4.1.3.

5.2.4.3.9 ABOR Command

There are no additional requirements to the ABOR command as specified in RFC 959, section 4.1.3.

5.2.4.3.10 DELE Command

There are no additional requirements to the DELE command as specified in RFC 959, section 4.1.3.

5.2.4.3.11 RMD Command

There are no additional requirements to the RMD command as specified in RFC 959, section 4.1.3.

5.2.4.3.12 MKD Command

There are no additional requirements to the MKD command as specified in RFC 959, section 4.1.3.

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5.2.4.3.13 PWD Command

There are no additional requirements to the PWD command as specified in RFC 959, section 4.1.3.

5.2.4.3.14 LIST Command

There are no additional requirements to the LIST command as specified in RFC 959, section 4.1.3 and RFC 1123, section 4.1.2.7.

5.2.4.3.15 NLST Command

There are no additional requirements to the NLST command as specified in RFC 959, section 4.1.3 and RFC 1123, section 4.1.2.7.

5.2.4.3.16 SITE Command

There are no additional requirements to the SITE command as specified in RFC 959, section 4.1.3 and RFC 1123, section 4.1.2.8.

5.2.4.3.17 SYST Command

There are no additional requirements to the SYST command as specified in RFC 959, section 4.1.3.

5.2.4.3.18 STAT Command

There are no additional requirements to the STAT command as specified in RFC 959, section 4.1.3.

5.2.4.3.19 HELP Command

There are no additional requirements to the HELP command as specified in RFC 959, section 4.1.3.

5.2.4.3.20 NOOP Command

There are no additional requirements to the NOOP command as specified in RFC 959, section 4.1.3.

5.2.5 FTP Replies

There are no additional requirements to the FTP replies as specified in RFC 959, section 4.2 and RFC 1123, section 4.1.2.11.

5.2.6 Minimum Implementation

There are no additional requirements as specified in RFC 959, section 5.1 and RFC 1123, section 4.1.2.13.

5.2.7 User Interface

5.2.7.1 Pathname Specification

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There are no additional requirements as specified in RFC 1123, section 4.1.4.1.

5.2.7.2 QUOTE Command

There are no additional requirements to the QUOTE command as specified in RFC 1123, section 4.1.4.2.

5.2.7.3 Displaying Replies to User

There are no additional requirements as specified in RFC 1123, section 4.1.4.3.

5.2.7.4 Maintaining Synchronization with server

There are no additional requirements as specified in RFC 1123, section 4.1.4.4.

5.2.8 Idle Timeout

There are no additional requirements as specified in RFC 1123, section 4.1.3.2.

5.2.9 Interface Conformance

Implementations claiming conformance to this DSP 2045-17504 shall support the following interfaces.

5.2.9.1 TCP Conformance

Support for the Transmission Control Protocol is required in order to operate in internet.

5.2.9.2 UDP Conformance

None

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ANNEX A (normative)

DSPICS REQUIREMENTS LIST (DPRL)

A.1 Introduction

This document provides the DOD Standardized Profile Implementation Conformance Statements (DSPICS) Requirements List (DPRL) for implementations of the DOD Standardized Profile (DSP) 2045-17504. The DSPICS for an implementation is generated by completing the DPRL in accordance with the following instructions.

An implementation shall satisfy the mandatory conformance requirements of the base standards referenced in this profile.

An implementation's completed DPRL is called the DSPICS. The DSPICS states which capabilities and options of the protocol have been implemented. The following can use the DSPICS:

- (a) the protocol implementor, as a checklist to reduce the risk of failure to conform to the standard through oversight.
- (b) the supplier and acquirer or potential acquirer of the implementation, as a detailed indication of the capabilities of the implementation, stated relative to the common basis for understanding provided by the standard DSPICS proforma.
- (c) the user or potential user of the implementation, as a basis for initially checking the possibility of inter-working with another implementation (note that, while inter-working can never be guaranteed, failure to internetwork can often be predicted from incompatible DSPICSSs).
- (d) a protocol tester, as the basis for selecting appropriate tests against which to assess the claim for conformance of the implementation.

A.1.1 Notation

The following notations and symbols from MIL-HDBK 829, which references ISO/IEC TR 10000-1 and -2, are used in the DPRL to indicate the status of features:

Status Symbols

m	- mandatory
m.<n>	- support of every item of the group labeled by the same numeral <n> required, but only one is active at a time
o	- optional
o.<n>	- optional, but support of at least one of the group of options labeled by the same numeral <n> is required
c	- conditional
-	- non-applicable (i.e. logically impossible in the scope of the profile)
x	- excluded or prohibited
i	- out of scope of profile (left as an implementation choice)

In addition, the symbol "●" is used to indicate an option whose status is not constrained by the profile (status in the base standard). The o.<n> notation is used to show a set of selectable options (i.e., one or more of the set must be implemented) with the same identifier <n>.

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Two character combinations may be used for dynamic conformance requirements. In this case, the first character refers to the static (implementation) status, and the second refers to the dynamic (use); thus "mo" means "mandatory to be implemented, optional to be used."

Notations for Conditional Status

The following predicate notations are used:

<predicate>:: This notation introduces a group of items, all of which are conditional on <predicate>.

<predicate>: This notation introduces a single item which is conditional on <predicate>.

In each case, the predicate may identify a profile feature, or a boolean combination of predicates. ("^" is the symbol for logical negation.)

<index>: This predicate symbol means that the status following it applies only when the DPICS states that the features identified by the index are supported. In the simplest case, <index> is the identifying tag of a single DPICS items. The symbol <index> also may be a Boolean expression composed of several indices.

<index>:: When this group predicate is true, the associated clause should be completed.

Notations used in the Protocol Feature Column

<r> Symbol used to denote the receiving system.

<t> Symbol used to denote the transmitting system.

Support Column Symbols

The support of every item as claimed by the implementor is stated by circling the appropriate answer (Yes, No, or N/A) in the support column:

- | | |
|-----|--------------------------------------|
| Yes | Supported by the implementation. |
| No | Not supported by the implementation. |
| N/A | Not applicable. |

Base standard requirements are shown using the equivalent notations in upper case (e.g., M, O, X).

A.1.2 Footnotes

Footnotes to the proforma are indicated by superscript numerals. The footnote appears on the page of the first occurrence of the numeral. Subsequent occurrences of a numeral refer to the footnote of the first occurrence.

A.1.3 Instructions for Completing the DPRL

A DSP implementor shows the extent of compliance to a DSP by completing the DPRL; that is, compliance to all mandatory requirements and the options that are not supported are shown. The resulting completed DPRL is called a DPICS. Where this profile refines the features of the base standards, the requirements expressed in this DPRL shall be applied (as indicated in DPRL items with no "Profile Support" column) to constrain the allowable responses in the base standard PICS proforma. When this profile makes additional requirements, the "Profile Support" column for such DPRLs shall be completed. In this column, each response shall be selected either from the indicated set of responses, or it shall comprise one or more parameter values as requested. If a conditional requirement is inapplicable, use the Not Applicable (NA) choice. If a mandatory requirement is not satisfied, exception information must be supplied by entering a reference Xi, where i is a unique identifier, to an accompanying rationale for the noncompliance. When the profile requirement is expressed as a two-character combination (as defined in A.1.1 above), the response shall address each element of the requirement; e.g., for the requirement "mo," the possible compliant responses are "yy" or "yn."

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A.2 Standards Referenced

This profile specifies the provision of the File Transfer Protocol (FTP) as specified in IAB STD 9 (RFC 959: October 1985, File Transfer Protocol) and IAB STD 3 (RFC 1123: October 1989, Requirements for Internet Hosts -- Application and Support).

A.3 DSPICS Requirements List

A.3.1 General Information

A.3.1.1 Implementation Identification

Supplier	
Contact point for queries about the profile	
Implementation Name(s) and Version(s)	
Date of statement	
Other Information: Machine Name, Operating Systems, System Name	

A.3.2 Data Types

Item	Types	Profile		Support		Base Std. References
		Send	Reply	Send	Reply	
1	ASCII - Non-Print (AN)	m	m	Yes	Yes	1123 4.1.2.13
2	ASCII - Telnet (AT) -- if same as AN	m	m	Yes	Yes	1123 4.1.2.2
2.1	ASCII - Telnet (AT) -- if different from AN	o	o	Yes No	Yes No	1123 4.1.2.2
3	ASCII - Carriage Control (AC)	o	o	Yes No	Yes No	959 3.1.1.5.2
4	EBCDIC - (any form)	o	o	Yes No	Yes No	959 3.1.1.2
4.1	EBCDIC - Non-print (EN)	4:m	4:m	Yes No	Yes No	959 3.1.1.5.1
4.2	EBCDIC - Telnet (ET)	o	o	Yes No	Yes No	959 3.1.1.5.2
4.3	EBCDIC - Carriage Control (EC)	o	o	Yes No	Yes No	959 3.1.1.5.2
5	IMAGE	m	m	Yes	Yes	1123 4.1.2.1
6	LOCAL 8	m	m	Yes	Yes	1123 4.1.2.1

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Item	Types	Profile		Support		Base Std. References
		Send	Reply	Send	Reply	
7	LOCAL m ¹	o	o	Yes No	Yes No	1123 4.1.2.1

A.3.3 Data Structure

Item	Structure	Profile		Support		Base Std. References
		Send	Reply	Send	Reply	
1	File	m	m	Yes	Yes	1123 4.1.2.13
2	Record ²	m	m	Yes	Yes	1123 4.1.2.13
3	Page	x	x	No	No	1123 4.1.2.3

A.3.4 Transmission Modes

Item	Modes	Profile		Support		Base Std. References
		Send	Reply	Send	Reply	
1	Stream	m	m	Yes	Yes	1123 4.1.2.13
2	Block	o	o	Yes No	Yes No	959 3.4.2
3	Compressed	o	o	Yes No	Yes No	959 3.4.3

A.3.5 FTP Commands

Item	Command	Profile		Support		Base Std. References
		Send	Reply	Send	Reply	
1	ACCESS CONTROL COMMANDS					
1.1	USER NAME (USER)	m	m	Yes	Yes	1123 4.1.2.13
1.2	PASSWORD (PASS)	m	m	Yes	Yes	1123 4.1.2.13
1.3	ACCOUNT (ACCT)	m	m	Yes	Yes	1123 4.1.2.13
1.4	CHANGE WORKING DIRECTORY (CWD)	m	m	Yes	Yes	1123 4.1.2.13
1.5	CHANGE TO PARENT DIRECTORY (CDUP)	m	m	Yes	Yes	1123 4.1.2.13

¹Here "m" is the number of bits in a memory word.

²Required for host with record-structured file system, optional otherwise.

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Item	Command	Profile		Support		Base Std. References
		Send	Reply	Send	Reply	
1.6	STRUCTURE MOUNT (SMNT)	o	o	Yes No	Yes No	959 5.3.1
1.7	REINITIALIZE (REIN)	o	o	Yes No	Yes No	959 5.3.1
1.8	LOGOUT (QUIT)	m	m	Yes	Yes	1123 4.1.2.13
2	TRANSFER PARAMETER COMMANDS					
2.1	DATA PORT()	m	m	Yes	Yes	1123 4.1.2.13
2.2	PASSIVE (PASV)	m	m	Yes	Yes	1123 4.1.2.6
2.3	REPRESENTATION TYPE (TYPE)	m	m	Yes	Yes	1123 4.1.2.13
2.4	FILE STRUCTURE (STRU)	m	m	Yes	Yes	1123 4.1.2.13
2.5	TRANSFER MODE (MODE)	m	m	Yes	Yes	1123 4.1.2.13
3	SERVICE COMMANDS					
3.1	RETRIEVE (RETR)	m	m	Yes	Yes	1123 4.1.2.13
3.2	STORE (STOR)	m	m	Yes	Yes	1123 4.1.2.13
3.3	STORE UNIQUE (STOU)	o	m	Yes No	Yes	959 5.3.1
3.4	APPEND (with create) (APPE)	m	m	Yes	Yes	1123 4.1.2.13
3.5	ALLOCATE (ALLO)	o	o	Yes No	Yes No	959 5.3.1
3.6	RESTART (REST)	A.3.4,2 or A.3.4,3:m	A.3.4,2 or A.3.4,3:m	Yes No	Yes No	959 5.3.1
3.7	RENAME FROM (RNFR)	m	m	Yes	Yes	1123 4.1.2.13
3.8	RENAME TO (RNTO)	m	m	Yes	Yes	1123 4.1.2.13
3.9	ABORT (ABOR)	o	m	Yes No	Yes	959 5.3.1
3.10	DELETE (DELE)	m	m	Yes	Yes	1123 4.1.2.13
3.11	REMOVE DIRECTORY (RMD)	m	m	Yes	Yes	1123 4.1.2.13
3.12	MAKE DIRECTORY (MKD)	m	m	Yes	Yes	1123 4.1.2.13
3.13	PRINT WORKING DIRECTORY (PWD)	m	m	Yes	Yes	1123 4.1.2.13
3.14	LIST (LIST)	m	m	Yes	Yes	1123 4.1.2.13
3.15	NAME LIST (NLST)	m	m	Yes	Yes	1123 4.1.2.13
3.16	SITE PARAMETERS (SITE)	o	o	Yes No	Yes No	1123 4.1.2.8
3.17	SYSTEM (SYST)	m	m	Yes	Yes	1123 4.1.2.13
3.18	STATUS (STAT)	m	m	Yes	Yes	1123 4.1.2.13
3.19	HELP (HELP)	m	m	Yes	Yes	1123 4.1.2.13
3.20	NOOP (NOOP)	m	m	Yes	Yes	1123 4.1.2.13

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A.3.6 "Experimental" Directory commands³

Item	Command	Profile		Support		Base Std. References
		Send	Reply	Send	Reply	
1	XMKD	x	m	No	Yes	1123 4.1.3.1
2	XRMD	x	m	No	Yes	1123 4.1.3.1
3	XPWD	x	m	No	Yes	1123 4.1.3.1
4	XCUP	x	m	No	Yes	1123 4.1.3.1
5	XCWD	x	m	No	Yes	1123 4.1.3.1

A.3.7 Other Features

Item	Feature	Profile		Support		Base Std. References
		Send	Reply	Send	Reply	
1	Concurrency of data and control	o	m	Yes No	Yes	1123 4.1.3.3
2	FTP Restart Mechanism	A.3.4.2 or A.3.4.3:m	A.3.4.2 or A.3.4.3:m	Yes No	Yes No	1123 4.1.3.4
3	Default data port same IP address as control connection	m	m	Yes	Yes	1123 4.1.2.12
4	User-FTP send Telnet commands except SYNCH and IP	x	x	No	No	1123 4.1.2.12
5	User-FTP negotiate Telnet options	x	x	No	No	1123 4.1.2.12
6	Server-FTP handle Telnet options	N/A	m	N/A	Yes	1123 4.1.2.12
7	Use TCP READ boundaries on control connection	x	x	No	No	1123 4.1.2.10
8	User-FTP send PORT command for stream mode	m	N/A	Yes	N/A	1123 4.1.2.5
9	Server-FTP send only correct reply format	N/A	m	N/A	Yes	1123 4.1.2.11
10	server-FTP use defined reply code if possible	N/A	m	N/A	Yes	1123 4.1.2.11
11	user-FTP use only high digit of reply	m	N/A	Yes	N/A	1123 4.1.2.11
12	User-FTP handle multi-line reply lines	m	N/A	Yes	N/A	1123 4.1.2.11

³There may still be existing implementations using the "Experimental" form of the directory commands. According to RFC 1123, section 4.1.3.1, all FTP implementations should recognize "Standard" and "Experimental" forms of these commands.

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Item	Feature	Profile		Support		Base Std. References
		Send	Reply	Send	Reply	
13	User-FTP handle 421 reply specially	x	x	Yes No	No	1123 4.1.2.11
14	Sender assume 110 replies are synchronous	x	x	No	No	1123 4.1.3.4

A.3.8 Idle Timeout

Item	Structure	Profile		Support		Base Std. References
		Send	Reply	Send	Reply	
1	Configurable idle timeout	o	N/A	Yes No	N/A	1123 4.1.3.2

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ANNEX B (informative)

CONCLUDING MATERIAL

B.1 Deviations from Base Standards

This DOD Standardized Profile addresses the File Transfer Protocol (FTP) in a ISO/IEC TR 10000, "Framework and Taxonomy of International Standardized Profiles" and MIL-HDBK-829 format. The following FTP commands are optional in the base standard, but mandatory on reception in this profile.

- Store Unique (STOU)
 - Abort (ABOR)

The classification of the requirements in RFC 959 and RFC 1123 have been changed in the DSPICS to the following:

<u>RFC</u>	<u>MIL-STD</u>
MUST	Mandatory
SHOULD	Mandatory
MAY	Optional
SHOULD NOT	Prohibited
MUST NOT	Prohibited

B.2 Subject Term (Key Word) Listing

Client/Server
Data Communications Protocol Standards (DCPS)
DCPS Technical Management Panel (DTMP)
DDN
DOD Standardized Profile (DSP)
File Transfer
Internet
Interoperability
Network
PICS Proforma
Profile
RFC
Standardization
Internet Standards

B.3 Preparing Activity

Defense Information Systems Agency (DISA) - DC
Project: DCPS-0008, Subproject 02

B.4 Reviewing Activities

Army SC, PT

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Air Force	13, 17, 29, 33, 90
DLA	DH
DMA	MP
DIA	DI
DOT	OST
NSA	NS
OASD	IQ, DO, IR
ODISC4	AC
STRICOM	PT
NAVY	EC, CH, ND, TD, OM
USMC	MC, CG

B.5 Custodians

DISA:	DC
Army:	SC
Air Force:	90
Navy:	OM
DIA:	DI
NSA:	NS
USMC:	MC
DLA:	DH
Other:	Joint Staff/Architecture & Integration USSPACECOM

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

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3. DOCUMENT TITLE Information Technology - DOD Standardized Profile (DSP) - Internet File Transfer Profile for DOD Communications - File Transfer Protocol			
4. NATURE OF CHANGE (<i>Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.</i>)			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME (<i>Last, First, Middle Initial</i>) Rose Satz	b. ORGANIZATION	d. TELEPHONE (<i>Include Area Code</i>) (1) Commercial (2) DSN <i>(If applicable)</i>	
c. ADDRESS (<i>Include Zip Code</i>) Director JIEO Attn: TBBF Ft. Monmouth, NJ 07703-5613	7. DATE SUBMITTED (YYMMDD)		
8. PREPARING ACTIVITY DEFENSE INFORMATION SYSTEMS AGENCY (DISA)			
a. NAME Rose Satz	b. TELEPHONE (<i>Include Area Code</i>) (1) Commercial (2) DSN		
c. ADDRESS (<i>Include Zip Code</i>) Director JIEO Attn: TBBF Ft. Monmouth, NJ 07703-5613	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 DSN 289-2340		